|                       | F               | xploring the Ex                 | treme  |
|-----------------------|-----------------|---------------------------------|--|
|                       | <u>_</u>        | 2005 Mathema                    |  |
|                       | Grade Level and |                                 | ontent Expectations                              |
| Michigan Mathemat     |                 |                                 | ontone Expositations                             |
| Grade 1               |                 |                                 |  |
| Activity/Lesson       | State           | Standards                       |  |
|                       |                 |                                 |  |
| Finding the Center of |                 | MA.1.D.RE.01.                   | Collect and organize data to use in              |
| Gravity Using Rulers  | MI              | 01                              | pictographs.                                     |
| Changing the Center   |                 |                                 |  |
| of Gravity Using      |                 | MA.1.D.RE.01.                   | Collect and organize data to use in              |
| Moment Arms           | MI              | 01                              | pictographs.                                     |
|                       |                 |                                 |  |
|                       | E               | xploring the Ex                 |  |
|                       |                 | 2005 Mathema                    |  |
|                       |                 | High School C                   | ontent Expectations                              |
| Michigan Mathemat     | ics             |                                 |  |
| Grade 2               |                 |                                 |  |
| Activity/Lesson       | State           | Standards                       |  |
| L                     |                 |                                 |  |
| Finding the Center of |                 |                                 | Place 0 and halves, e.g., 1/2, 1 1/2, 2 1/2, on  |
| Gravity Using Rulers  | MI              | 20                              | the number line; relate to a ruler.              |
| Changing the Center   |                 | NAA O NI NAE OO                 | Diagram 0 and 11 at a second 4/0 4 4/0 0 4/0 and |
| of Gravity Using      |                 |                                 | Place 0 and halves, e.g., 1/2, 1 1/2, 2 1/2, on  |
| Moment Arms           | MI              | 20                              | the number line; relate to a ruler.              |
|                       | _               |                                 |  |
|                       |                 | xploring the Ex<br>2005 Mathema |  |
|                       | Grada Laval and |                                 |  |
| Michigan Mathemat     |                 | i nigri school c                | ontent Expectations                              |
| Grade 3               |                 |                                 |  |
| Activity/Lesson       | State           | Standards                       |  |
| Activity/Lesson       | State           | Statiuarus                      |  |
|                       |                 |                                 | Place fractions with denominators of 2, 4,       |
|                       |                 |                                 | and 8 on the number line; relate the number      |
| Finding the Center of |                 | MA.3.N.ME.03.                   | line to a ruler: compare and order up to three   |
| Gravity Using Rulers  |                 | 18                              | fractions with denominators 2, 4, and 8.         |
| Training raining      |                 |                                 |  |
|                       | E               | xploring the Ex                 | treme  |
|                       |                 | 2005 Mathema                    |  |
|                       | Grade Level and |                                 | ontent Expectations                              |
| Michigan Mathemat     |                 |                                 | -  |
| Grade 4               |                 |                                 |  |
| Activity/Lesson       | State           | Standards                       |  |
|                       |                 |                                 |  |
| Finding the Center of |                 | MA.4.M.UN.04.                   | Measure using common tools and select            |
| Gravity Using Rulers  | MI              | 01                              | appropriate units of measure.                    |
|                       |                 |                                 |  |
| Finding the Center of |                 |                                 | Give answers to a reasonable degree of           |
| Gravity Using Rulers  | MI              | 02                              | precision in the context of a given problem.     |

| Finding the Center of           |                 |                 |  |  |  |  |
|---------------------------------|-----------------|-----------------|--|--|--|--|
| Gravity Using Plumb             |                 | MA A MILINI OA  | Measure using common tools and select          |  |  |  |
| Lines                           | МІ              | 01              | appropriate units of measure.                  |  |  |  |
| Changing the Center             | IVII            | UT              | appropriate units of measure.                  |  |  |  |
| of Gravity Using                |                 | MA A MILINI OA  | Measure using common tools and select          |  |  |  |
| Moment Arms                     | MI              |                 | •  |  |  |  |
|                                 | IVII            | 01              | appropriate units of measure.                  |  |  |  |
| Changing the Center             |                 | MA AM DO 04     | Cive anamera to a reasonable degree of         |  |  |  |
| of Gravity Using<br>Moment Arms | NAI.            |                 | Give answers to a reasonable degree of         |  |  |  |
|                                 | MI              | 02              | precision in the context of a given problem.   |  |  |  |
| Changing the Center             |                 | NAA 4 0 00 04   | Identify and draw perpendicular, parallel, and |  |  |  |
| of Gravity Using                | N 41            |                 | intersecting lines using a ruler and a tool or |  |  |  |
| Moment Arms                     | MI              | 01              | object with a square (90°) corner.             |  |  |  |
| Changing the Center             |                 |                 |  |  |  |  |
| of Gravity Using                |                 |                 | Construct tables and bar graphs from given     |  |  |  |
| Moment Arms                     | MI              | 01              | data.  |  |  |  |
|                                 |                 |                 |  |  |  |  |
|                                 | E               | xploring the Ex |  |  |  |  |
| 2005 Mathematics                |                 |                 |  |  |  |  |
|                                 |                 | High School C   | ontent Expectations                            |  |  |  |
| Michigan Mathemat               | ics             |                 |  |  |  |  |
| Grade 5                         |                 |                 |  |  |  |  |
| Activity/Lesson                 | State           | Standards       |  |  |  |  |
|                                 |                 |                 | Measure angles with a protractor and           |  |  |  |
|                                 |                 | MA.5.G.GS.05.   | classify them as acute, right, obtuse, or      |  |  |  |
| Vectoring                       | MI              | 02              | straight.                                      |  |  |  |
|                                 |                 |                 | Find unknown angles in problems involving      |  |  |  |
|                                 |                 | MA.5.G.GS.05.   | angles on a straight line, angles surrounding  |  |  |  |
| Vectoring                       | MI              | 04              | a point, and vertical angles.                  |  |  |  |
|                                 |                 |                 | Understand percentages as parts out of 100,    |  |  |  |
| Center of Gravity,              |                 | MA.5.N.ME.05.   | use % notation, and express a part of a        |  |  |  |
| Pitch, Yaw                      | MI              | 09              | whole as a percentage.                         |  |  |  |
|                                 |                 |                 | Read and interpret line graphs, and solve      |  |  |  |
|                                 |                 |                 | problems based on line graphs, e.g.,           |  |  |  |
|                                 |                 |                 | distance-time graphs, and problems with two    |  |  |  |
|                                 |                 | MA.5.D.RE.05.   | or three line graphs on same axes,             |  |  |  |
| Fuel Efficiency                 | MI              | 01              | comparing different data.                      |  |  |  |
| ,                               |                 |                 |  |  |  |  |
|                                 | E               | xploring the Ex | treme  |  |  |  |
|                                 |                 | 2005 Mathema    |  |  |  |  |
|                                 | Grade Level and |                 | ontent Expectations                            |  |  |  |
| Michigan Mathemat               |                 | <u> </u>        |  |  |  |  |
| Grade 6                         |                 |                 |  |  |  |  |
| Activity/Lesson                 | State           | Standards       |  |  |  |  |
| Center of Gravity,              |                 | MA.6.N.FL.06.   | Calculate part of a number given the           |  |  |  |
| Pitch, Yaw                      | МІ              | 12              | percentage and the number.                     |  |  |  |
| Center of Gravity,              |                 | MA.6.N.MR.06.   |  |  |  |  |
| Pitch, Yaw                      | МІ              | 13              | percentages such as sales taxes and tips.      |  |  |  |
| ,                               |                 | . •             | Understand that relationships between          |  |  |  |
|                                 |                 | MA.6.A.RP.06.   | quantities can be suggested by graphs and      |  |  |  |
| Fuel Efficiency                 | MI              | 08              | tables.  |  |  |  |
| I doi Emolerioy                 | 1.441           | 00              | idoloo.  |  |  |  |

|                            | 1          |                               | Delete simple linear equations with integer  |
|----------------------------|------------|-------------------------------|--|
|                            |            | MA C A FO OC                  | Relate simple linear equations with integer  |
| ·                          |            | MA.6.A.FO.06.                 | coefficients, e.g., $3x = 8$ or $x + 5 = 10$ , to  |
| Fuel Efficiency            | MI         | 11                            | particular contexts and solve.   |
|                            |            | Evaloring the Ev              | tromo  |
|                            |            | Exploring the Ex 2005 Mathema |  |
|                            | Grado I ov | rel and High School C         |  |
| Michigan Mathem            |            |                               |  |
| Grade 7                    |            |                               |  |
| Activity/Lesson            | State      | Standards                     |  |
| Activity/Ec33011           | Otate      | Otaridards                    | Use a ruler and other tools to draw squares,   |
| Center of Gravity,         |            | MA.7.G.SR.07.                 | •  |
| Pitch, Yaw                 | МІ         | 01                            | with specified dimensions.   |
| i itori, raw               | 1711       | 01                            | Recognize when information given in a table,   |
|                            |            | MA.7.A.PA.07.                 | graph, or formula suggests a directly  |
| Fuel Efficiency            | MI         | 01                            | proportional or linear relationship.   |
| 1 del Emolerioy            | IVII       | 01                            | Represent directly proportional and linear   |
|                            |            |                               | relationships using verbal descriptions,   |
|                            |            | MA.7.A.RP.07.                 | tables, graphs, and formulas, and translate  |
| Fuel Efficiency            | MI         | 02                            | among these representations.   |
| T del Emolericy            | IVII       | 02                            | among these representations.   |
|                            |            | Exploring the Ex              | trama  |
|                            |            | 2005 Mathema                  |  |
|                            | Grade Lev  | el and High School C          |  |
| Michigan Mathem            |            | or and ringin concer c        |  |
| Grade 8                    |            |                               |  |
| Activity/Lesson            | State      | Standards                     |  |
| / to v . t . y / _ c c c c | Julio      | Otaliaa ao                    | Recognize practices of collecting and  |
|                            |            | MA.8.D.AN.08.                 | displaying data that may bias the  |
| Jet Propulsion             | МІ         | 02                            | presentation or analysis.  |
|                            |            |                               | Recognize practices of collecting and  |
|                            |            | MA.8.D.AN.08.                 | displaying data that may bias the  |
| Vectoring                  | МІ         | 02                            | presentation or analysis.  |
| Center of Gravity,         | 1          | MA.8.N.FL.08.                 | Estimate and solve problems with square  |
| Pitch, Yaw                 | МІ         | 05                            | roots and cube roots using calculators.  |
| i non, ran                 |            | MA.8.N.FL.08.                 | Estimate and solve problems with square  |
| Fuel Efficiency            | МІ         | 05                            | roots and cube roots using calculators.  |
|                            |            |                               | Identify and represent linear functions,   |
|                            |            |                               | quadratic functions, and other simple  |
|                            |            |                               | functions including inversely proportional   |
|                            |            |                               | relationships $(y = k/x)$ ; cubics $(y = ax^3)$ ; roots  |
|                            |            |                               | (y = the square root of x); and exponentials   |
|                            |            | MA.8.A.RP.08.                 | (y = a  to the  x  power, a > 0); using tables,  |
| Fuel Efficiency            | МІ         | 01                            | graphs, and equations.   |
|                            |            |                               | 3. sp. 1. |
|                            |            |                               | Recognize basic functions in problem   |
|                            |            |                               | context, e.g., area of a circle is pi r², volume   |
|                            |            |                               |  |
|                            |            | MA.8.A.PA.08.                 | of a sphere is 4/3pi r³, and represent them  |